

REMARKS

In the Office Action, claims 39 to 56 are rejected as failing to comply with the written description requirement. Applicant herein amends claim 39 to substitute the positive recitation suggested in the Office Action for the objected term. Such an amendment should be accepted after final because as the Examiner indicates, there is a similarity of the positive and negative recitations, and no search should be required.

The Examiner rejects claims 39, 43-46, 48, and 52-56 as being anticipated by Hirosawa (US 5,682,190). This rejection is respectfully traversed.

Claim 39 defines a pressure chamber adapted to be filled with a buffer medium and a pressure generator for applying a pressure to the buffer medium in such a way that a plurality of micro droplets will simultaneously be applied onto the substrate through a plurality of nozzle orifices. Thus, it is clear from the claim wording that applying a pressure to the buffer medium is the cause of ejecting the plurality of micro droplets through the plurality of nozzle orifices. In the subject Office Action, chamber 7 of Hirosawa is regarded as representing such a "pressure chamber". Applicant respectfully disagrees.

Hirosawa teaches an ink jet head having a plurality of liquid paths 102 communicating with ejection outlets 101 and a common liquid chamber 104, see column 9, lines 30 to 44 of Hirosawa and Figs. 4A, 4B thereof. An ejection heater 103 is arranged in each of the liquid paths 102. In operation, thermal energy is generated by the ejection heaters 103, causing the ink in the liquid path 102 to be heated, whereby ink droplets are ejected from a number of ejection outlets 101, see column 10, lines 11 to 22 of Hirosawa. The generated heat is then applied to ink in the liquid path to generate the pressure required for ink ejection, and subsequently, ink is ejected from the ink ejection outlet so as to allow ink droplets to be shot onto the recording material, see column 1, lines 40 to 46 of Hirosawa.

Thus, heating ink within the ink path and the pressure generated thereby is the cause of the ink ejection according to Hirose.

Column 10, lines 22 to 29 of Hirose read: "As shown in Fig. 4A, a low intensity of squeezing power for squeezing ink toward the ink liquid path 104 from the respective liquid path 102 in the direction of arrow A appears every time ink ejection is completed. However, since the ink liquid chamber 104 is communicated with the air chamber 7, the foregoing pressure derived from the respective liquid path 102 is absorbed into regions 7A and 7B of the air chamber 7". Accordingly, the pressure is in the direction from the liquid path 102 through the common liquid chamber 104 to the air chamber 7. Accordingly, the pressure applied to the buffer medium, i.e. the air in the air chamber 7, is clearly not the cause of ink ejection through the ejection outlets 101. Accordingly, the ejection heaters 103 do clearly not represent a pressure generator for applying a pressure to the air in the air chamber 7 in such a way that a plurality of micro droplets will simultaneously be ejected.

In light of the above considerations, the Examiner's rejection of claim 39 in section 4 of the subject Office Action appears to be improper.

The remaining rejected claims depend from claim 39 and should be allowable for at least the same reasons.

New claims 57-58 are added. According to claim 57, the ends of the liquid-columns, which are spaced apart from the nozzle orifices, are fluid insulated from each other by the buffer medium. This feature can be derived from the Figs. of the present application along with the specification, page 6, lines 24 and 25. According to claim 58, the pressure generator is a single pressure generator which is not configured to permit ejection of liquid through a subset of the plurality of nozzle orifices only. This feature is an inherent feature of the pressure generators described in the present application with respect to the different embodiments shown in Figs. 1, 6 and 7.

Should the Examiner deem it helpful, he is encouraged to contact Applicant's attorney, Jeffrey Brill at (650) 474-8400.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Jeff Brill", with a stylized, flowing script.

Jeffrey Brill
Reg. No. 51,198

Customer No. 22,862